



State of Utah

Department of
Environmental Quality

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DIVISION OF AIR QUALITY
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DAQ-021-08

MEMORANDUM

TO: Air Quality Board

THROUGH: Cheryl Heying, Executive Secretary

FROM: Joe Thomas, Mobile Sources Manager

DATE: March 5, 2008

SUBJECT: Air Quality Public Information Policy Follow-up Response to Mr. William Bowen's Presentation to Utah Air Quality Board on February 6, 2008.

The following is provided, at the request of the Utah Air Quality Board, to address some specific concerns raised by Mr. William Bowen at the Board meeting of February 6, 2008. It is presented in a question/answer format.

Question: Mr. Bowen asks: why is there a difference between the National Emissions Inventory (NEI) reported by EPA and the Utah Division of Air Quality's inventory found on the Air Quality website <http://www.airquality.utah.gov/Planning/Emission-Inventory/index.htm>?

Response: The differences Mr. Bowen pointed out between the two inventories are explained as follows:

The two inventories were compiled for different years. The NEI was compiled for 2002 and DAQ's inventory was compiled for 2005. Even if the two inventories had represented the same averaging period, there would have been slight differences anyway. The NEI is a national average of all the annual inventories submitted by the 50 states. Utah submitted its inventory to the EPA as part of this effort; however, subsequent modifications were made by the EPA to develop the national average.

The DAQ's inventory on the web includes emissions from biogenics, wildfire, and road dust that were not required by EPA for inclusion in the NEI. The differences highlighted by Mr. Bowen with respect to the mobile source sector were reported in terms of percentages of the overall inventory; but inclusion of these other emissions in our inventory affected the comparison with the NEI in the following ways:

Biogenics add VOC (from trees, etc.) to the non-mobile sector of the inventory, diluting the percentage of the total VOC inventory contributed by mobile sources.

Wildfire, while a very small contributor to the total inventory, adds PM to the non-mobile sector of the inventory, diluting the percentage of the total PM inventory contributed by mobile sources.

Road dust adds significant PM to the mobile source sector of the inventory, increasing the percentage of the total PM inventory contributed by mobile sources.

These effects may be seen in the following chart, which compares the percentages of mobile source contribution against the total inventory for NO_x, PM and VOC. The first column shows the NEI for 2002. The second column shows the DAQ inventory for 2005 as contained on our web page, including biogenic VOCs and PM from road dust and wildfires. The third column shows the DAQ's inventory for 2005 excluding those three source categories. The totals for PM and VOC in the third column are very similar to those which were reported by the NEI.

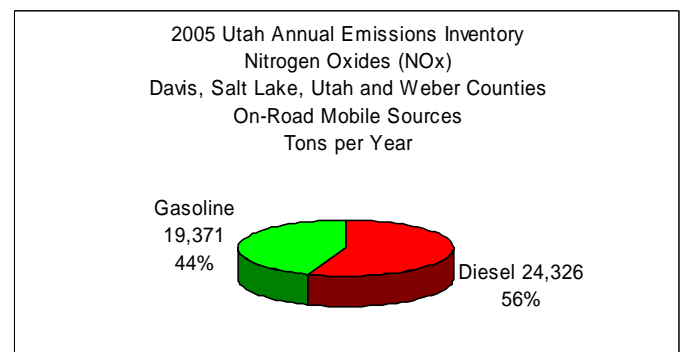
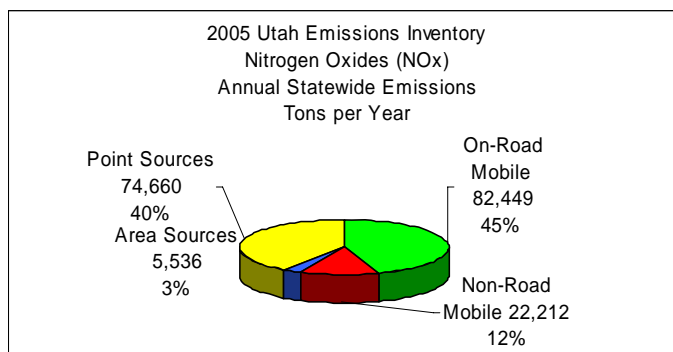
On-road Mobile Source Inventory Comparison

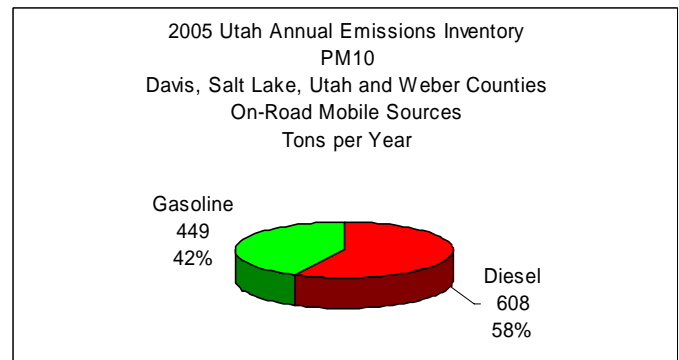
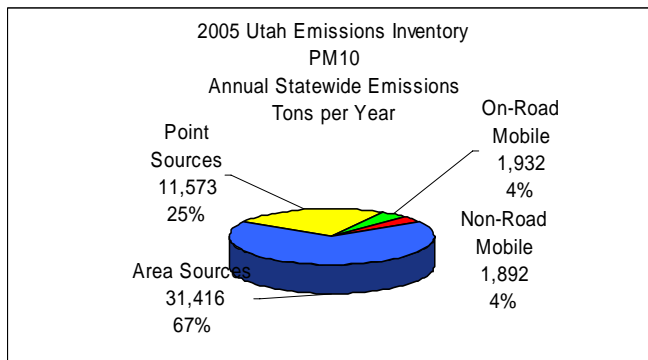
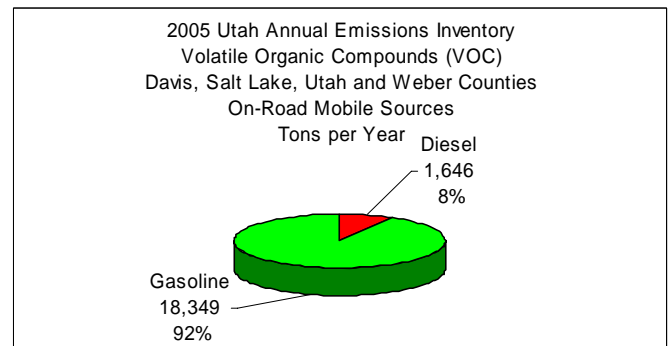
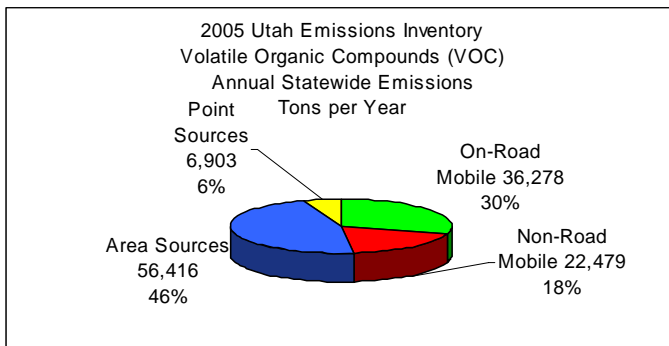
	NEI 02	DAQ 05*	DAQ 05
NO _x	34.9%	44.0%	44.6%
PM	0.9%	36.0%	4.1%
VOC	27.5%	4.0%	29.7%

*Includes biogenic VOC, PM road dust and wildfires

Question: Mr. Bowen pointed out that the majority of mobile source NO_x was attributable to heavy-duty vehicles, and in particular, to heavy-duty diesels. Why then, he asked, does DAQ focus on all motor vehicles, and not focus solely on diesels?

Response: DAQ's data shows that mobile sources are one of the largest contributors to Utah's PM and ozone problems, and that diesel vehicles contribute a disproportionate share of NO_x and PM associated with those problems. In the charts below, those on the left show the overall contribution of the mobile source sector, while those on the right compare diesel with gasoline emissions.





These numbers were calculated using EPA's most current version of the MOBILE6 model, which includes emissions factors for each vehicle type. Vehicle mix data reflecting local conditions were obtained from Utah Tax Commission. Vehicle miles traveled and appropriate speeds were obtained from the Metropolitan Planning Organizations. This insures that DAQ's mobile source inventory is more accurate than it would be had we simply used national default data.

Recognizing that mobile sources contribute significantly to ozone and PM pollution in Utah, DAQ implements a variety of strategies to mitigate emissions. Within these mobile source strategies are specific programs targeted at both diesel and gasoline vehicles. Utah implemented one of the first diesel inspection/maintenance (I/M) programs in the nation. We are continuing to improve this program as new technologies are introduced. Other controls directed at diesel vehicles include retrofitting of school buses and snowplows and current work to encourage idling reduction ordinances.

Concerning gasoline-powered vehicles, Utah continues to implement I/M programs in support of a long history of improvement in vehicle performance with respect to air emissions. Looking into the future, DAQ has assumed a leadership role in the implementation of On-Board Diagnostics (OBD) to fulfill this role, being first in the nation to modify our I/M program to accommodate OBD technology found in 1996 and newer vehicles.

DAQ anticipates continued improvement in mitigating emissions from mobile sources as the federal Tier II tailpipe standards, low-sulfur diesel, and low-sulfur gasoline programs are implemented. The improvements in fuel standards will allow the achievement of the Tier II standards by permitting the use of

a new generation of catalytic converters. These programs will work together to provide emission reductions for both diesel and gasoline-powered vehicles.

Question: Mr. Bowen takes exception to DAQ's focus on the "average driver" who operates a light-duty gasoline vehicle. In particular, he takes exception to the message advising drivers to park the car and take the bus instead. He points out that buses pollute more than cars, and therefore, DAQ's message is counter-productive.

Response: DAQ stands by its message to the public. While recognizing that significant progress has been achieved in producing cleaner vehicles, the sheer number of these vehicles still contributes in a significant way to the air pollution problems experienced in Utah. As shown by the preceding charts, gasoline-powered vehicles are responsible for 44% of mobile NO_x, 92% of mobile VOC and 42% of mobile PM. DAQ's overall message to the average driver is intended to help him/her drive more efficiently and, where possible, to drive less. The emission reductions are of even greater importance during our summer ozone and winter PM_{2.5} action and alert days.

DAQ does not consider buses as an air quality strategy per se, but recognizes they provide a co-benefit in terms of both air quality and decreased congestion. Getting drivers to park their cars and ride the bus helps in two ways: It increases the efficiency of existing buses in terms of the grams of pollution they emit per rider-mile, and it helps to alleviate congestion on Utah's roadways. DAQ is not advocating for more buses; rather, its message to the public is aimed at better utilization of the existing buses.

In addition to increasing the use of existing mass transit, the Choose Clean Air website identified in our Air Quality Alert notices offers fifty ways the public can help decrease air pollution. These are provided as suggestions for those who are interested in becoming part of the solution. The tone of this message was not intended to "scold" anyone, but rather to provide information the public can use in making their day-to-day decisions.